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Title:

Changing the way we think about wounds: A challenge for 21st century medical practice.

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Competing Interests Statement:

There are NO competing interests.

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Wound care; wound management; biopsychosocial approach; patient-centred approach

Key points

- Globally the number of people chronically affected by wounds continues to rise
- As the prevalence of chronic illnesses such as diabetes and obesity increase so will the wounds associated with them
- Wound research currently fails to appreciate the impact that psychology has on health and illness outcomes
- Through interdisciplinary research we must change the way we treat people with wounds

Biographies:

Dr Lusher is a HCPC Registered and BPS Chartered Health Psychologist. She is also a Chartered Scientist and a Senior Lecturer and Researcher at the Institute for Research in Healthcare Policy and Practice at the University of the West of Scotland (London Campus). Dr Murray is also a HCPC Registered and BPS Chartered Health Psychologist who teaches Health Psychology to MBBS students within the Institute of Health Sciences Education at Queen Mary University of London. Dr David Chapman-Jones is a Professor of Healthcare and Director of the Institute for Research in Healthcare Policy and Practice at the University of The West of Scotland. Dr Chapman-Jones is a Medical specialist in complex wounds.

Commentary:

Changing the way we think about wounds: A challenge for 21st century medical practice.

In the UK alone over £5 billion are spent each year on treating leg ulcers and other types of wounds [1], yet the number of people chronically affected by non-healing wounds continues to rise [2]. As the prevalence of chronic illnesses such as diabetes increase [3], so will the wounds associated with them. Whilst some risk factors for wounds are fixed (e.g. age and sex) [4], the majority are linked to behavioural lifestyle factors such as exercise and smoking. Indeed, over 60% of risk factors for chronic illnesses are due to modifiable factors [5] and Health Psychology is fundamental to understanding how psychology contributes directly and indirectly to the cause, progression, experience and outcomes of any physical illness [6]. Moreover, early detection is an important predictor of recovery from wounds [7] so patient empowerment and good staff-patient relationships are key to successful wound management. Research has identified a range of problems that exist as a result of having a wound, but what we have yet to fathom are complex ways in which causative factors interact to produce a more or less favourable outcome for patients.

Regardless of the origin of the wound, whether it be a venous leg ulcer or a diabetic foot ulcer, shared factors must determine different wound outcomes. We know that some people appear

genetically susceptible to non-healing or therapy-resistant wounds due to individual differences in their immunity and healing rate [8-9]. Other individual differences such as personality traits could also predict poor wound healing. For example, low conscientiousness has been found the best predictor of disease burden, progression and severity [10] in various illnesses including diabetes and skin problems [11]. It is likely that conscientiousness holds its dominant influence over health outcomes as high levels of this trait acts as a protective factor against stress [12-13]; an influential factor in delayed wound healing [14]. Behavioural influences on illness outcomes include patient control and coping mechanisms such as self-examination and help-seeking [15-16]. However, the very language that we use 'wound care' and the focus of prior research suggests symptoms to be managed by a third party rather than empowering the patient to self-care. A joint review of guidelines for treating venous leg ulcers highlights that patients and their carers can play a proactive role in self-care, but negligible reference is made to how they might be empowered to do this [17].

Wound research has failed to recognise that not only does physical health influence our mental health, but that our psychology affects our physical health. Through interdisciplinary research we can turn the way that we think about wounds on its head by moving away from the traditional nurse-led (symptom management) approach to a more patient-centred approach. Our aim is to lobby for the adoption of a novel approach to understanding the complex relationships between various underlying causes of different health and illness outcomes for people with wounds. While we have been debating this biopsychosocial approach to health in the literature for over 40 years [18] we are still some way off translating our academic discussions into new advances in wound treatment. A radical transformation away from the overriding biomedical paradigm is the likely solution to these global wound management issues. While nominally acknowledging the mind-body connection, research currently fails to comprehend, or translate into practice, the complex inter-relationships that exist between the diverse factors associated with wounds. There is an appreciation that multiple factors contribute to wound care issues but there is little clarity about the

mechanism of that interaction. Currently, little has been explored in the way of psychological and cognitive mechanisms that influence wound onset and we know even less about individual differences in susceptibility to non-healing wounds. Engagement with the biopsychosocial approach [18-19] would allow for a comprehensive and person-centred approach to the complexity of the mind-body connection.

This timely, critical and comprehensive approach to chronic wound management is ambitious, yet speaks to new concepts that would pave the way for novel regimes, fresh ideas and modern treatment packages for patients with wounds. Based on health psychology principles, this can be achieved through new research that guides the organisation and delivery of multidisciplinary health services so that maximum benefit is felt by patients, the community and the overstretched National Health Service. Our main challenge is likely to be in utilising research findings in the design of tailored-interventions that can be both patient-centred and cost-effective. It is difficult to predict costs without knowing what findings will be generated from such innovative and exploratory research. However, expense should not be barrier to a shift in our approach to wound management considering that globally this growing problem is forecasted to cost over \$18.5 billion per year by 2021 [20]. Clearly it is time to throw down the gauntlet and change the way we treat individuals with complex wounds.

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